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ABSTRACT

This booklet highlights the efforts of five employers that rely on information technology (IT) workers and one "intermediary" organization connecting workplace experiences to classroom learning for secondary education students. The introduction lists the employers' and organizations' names, locations, and featured practices. The next three sections examine the IT industry; reasons why school-to-careers is an ideal strategy for addressing information technology industry skill needs; skills and certifications; and how the employer participation model works with students and teachers. These employers and intermediaries and their best practices are profiled: (1) The Kemtah Group (Albuquerque, New Mexico), which promotes school-to-careers experiences for under-represented populations; (2) The Gallup Organization (Omaha, Nebraska), which is helping students explore and understand the needs and demands of technology-driven workplaces; (3) EDS (Dallas, Texas), which gives students work-based opportunities; (4) Manpower,

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Inc. (Milwaukee, Wisconsin), which provides training and certification opportunities for students; (5) Intel Corporation (Santa Clara, California), which is working with teachers to make a difference through technology; and (6) Greater Louisville, Inc. (Louisville, Kentucky), which is building coalitions to connect work and learning. The following items are also included: (1) an annotated list of eight organizations and resources; (2) a glossary; and (3) a discussion of steps to build on the National Employer Leadership Council's agenda. (MN)

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Best Practices in School-to-Careers

The Information Technology Industry

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Helping Create Tomorrow's Workforce

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Helping Create
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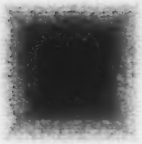

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National Employer Leadership Council

The National Employer Leadership Council is a business membership organization dedicated to expanding and enhancing employer involvement in school-to-careers. The NELC advocates and supports school-to-careers initiatives combining classroom courses with real-life learning to ensure all students meet high standards and, therefore, are prepared for continuing education and the cutting-edge jobs of the 21st Century. NELC members, and the NELC Leadership Board of senior business executives, are committed to sustaining the significant changes in teaching and learning taking place across the country as a result of school-to-careers.

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Information Technology Association of America

The Information Technology Association of America is the leading trade association representing the broad spectrum of the world-leading U.S. information technology industry. With its 26,000 direct and affiliate members, ITAA creates and markets products and information services associated with computers, communications, and data.

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The Techforce Initiative

The Techforce Initiative is a joint partnership of ITAA, the National Alliance of Business, and Education Development Center to highlight and expand information technology employer involvement in school-to-careers. For additional information visit the Techforce website at:

www.techworkforce.org/programs/stw.htm

Table of Contents

Introduction 2

Information Technology in a Global Society 4

School-to-Careers: Addressing Information Technology Needs 5

Skills and Certifications 7

Implementing School-to-Careers:

The Employer Participation Model 9

I. Working with Students 9

Career Awareness 10

Company Profile: The Kemtah Group, Albuquerque, New Mexico 10

Career Exploration 11

Company Profile: The Gallup Organization, Omaha, Nebraska 12

Career Preparation 12

Company Profile: EDS, Dallas, Texas 13

Company Profile: Manpower, Inc., Milwaukee, Wisconsin 14

II. Working with Teachers 15

Company Profile: Intel Corporation, Santa Clara, California 16

Third Party Intermediaries 17

Intermediary Profile: Greater Louisville, Inc., Louisville, Kentucky 17

Next Steps and Resources 19

Glossary of Terms 21

Introduction

This booklet is part of a series that demonstrates the scope and importance of employer involvement in school-to-careers. Each booklet in the series examines employer roles in specific industry sectors. This publication focuses on the importance of partnerships between educators and companies that rely on an information technology workforce. It grew out of the NELC's partnership with the Information Technology Association of America (ITAA) and *The Techforce Initiative,* a joint initiative of ITAA, the National Alliance of Business, and Education Development Center, Inc., to highlight and expand information technology employer involvement in school-to-careers.

Across the country, employers from all industries are supporting school-to-careers as a critical span of the bridge that prepares students for future education and careers. School-to-careers has brought together employers, educators, students, and community leaders to build coordinated series of activities that provide students with a clear understanding of the education and career options available to them and the skills and competencies required for success.

While employers are committed to improving the core academic achievement levels of all students and preparing them for success in all careers, employers in different industries can play unique roles in enhancing learning for specific students with particular interests and aptitudes. Together, the activities of all employers provide opportunities to connect with all students so they can learn, grow, and ultimately take control of their own educational and career goals.

Best Practices in School-to-Careers: The Information Technology Industry highlights the efforts of five employers that rely on information technology workers and one "intermediary" organization connecting workplace experiences to classroom learning to help young people develop IT skills. While each employer is recognized for a specific activity or series of

activities, together they demonstrate the need to create multiple opportunities for young people to learn and grow:

1. **EDS, Dallas, Texas:** Offering intensive work-based opportunities to students.
2. **The Gallup Organization, Omaha, Nebraska:** Helping young people explore and understand the needs and demands of the technology-driven workplace.
3. **Intel Corporation, Santa Clara, California:** Working with teachers to make difference through technology.
4. **The Kemtah Group, Albuquerque, New Mexico:** Ensuring pathways to success for all individuals.
5. **Manpower, Inc., Milwaukee, Wisconsin:** Providing training and certification opportunities for students.
6. **Greater Louisville, Inc., Louisville, Kentucky (Intermediary Profile):** Building coalitions to connect work and learning.

Information Technology in Global Society

Information technology (IT) is everywhere. The term itself relates to both an industry and a set of occupations, and its "products" affect every workplace and home. In the past, a small number of IT companies and workers could sustain the growth of the sector. In today's technology-driven society, that workforce is no longer limited to software developers and networking engineers.

Large retail companies need skilled staff to manage their inventories on web-linked databases. Most medium- and large-sized companies employ webmasters. Architectural firms use CAD/CAM software to construct building models. Electronics manufacturers employ increasingly high-skilled line workers. It is clear that as more companies come to rely on IT, the nature of the workforce will continue to change and evolve.

A Generation of Culture Change

Thirty-four percent of 300 students surveyed across the country ranked the computer as the single most important innovation in the 20th Century, compared with 27 percent of 300 parents. Thirty-six percent of the parents, meanwhile, chose antibiotics, compared with just 16 percent of the students. (Associated Press, January 12, 1999)

School-to-Careers: Addressing Information Technology Needs

The rapid rise of the IT industry, the scope of IT use across all of society, and the pace of technological change and improvement has led to an increased emphasis on technology skills. This emerging emphasis reflects a broader culture change in the United States, resulting in a demand for both technology "developers" and technology "users" who need to understand and operate technology in their daily lives. Over time, these broad needs can best be addressed by providing young people with a grounding in the key academic skills needed to use and work in IT.

Recent trends demonstrate that the education and training system is adapting to help individuals meet these needs. Certificate and community college programs in computer science are growing in popularity. From 1986 to 1997, the number of certifications and community colleges degrees awarded in this area rose 182 and 21 percent, respectively (U.S. Department of Education and U.S. Department of Labor).

This increase, however, may have led to reduced enrollments in higher levels of education. According the U.S. Department of Education, the percentage of individuals earning bachelor's degrees in computer science field decreased 38 percent from 1986 to 1997. In addition, since the majority of students in this field are still at the four-year level, the rapid growth in certifications and community college programs has not overcome the decrease in four-year degrees. As a result, the overall percentage of individuals completing formal training in computer science decreased 15 percent from 1986 to 1997.

While newer evidence is beginning to show a reversal of these trends, it is still unclear if overall enrollments will be sufficient to meet employer demand, particularly as the IT sector as a whole experiences rapid growth. To illustrate, *Bridging the Gap*, the recent study of the Information Technology Association of America, projects a demand for 1.6 million

new IT workers by the year 2001, but anticipates that 843,000 of those positions will remain vacant.

School-to-careers (STC) is an ideal strategy for reaching young people at an early age and helping them progress through education and careers to develop the basic and specific skills they will require if they choose to pursue careers in IT. STC also allows employers to play important roles in providing opportunities for those interested in developing the employability and industry-specific skills required for success in the knowledge economy.

Skills and Certifications

IT-STC adds the greatest value only when it helps students develop a mastery of a broad set of academic, foundation, and technical skills:

- Academic skills are those primarily taught and learned in schools, often referred to as "the basics." These skills cut across all disciplines, and are required for success in life - both personally and at work.
- Foundation skills, also referred to as "soft" skills or "employability" skills, encompass characteristics such as attitude, attendance habits, and the ability to work in teams. Every industry requires all of these foundation skills in varying degrees.
- Technical skills are skills and knowledge developed for specific careers, such as computer programming and other jobs in IT.

Students gain added value from their participation in STC when they can clearly demonstrate the skills they have developed. Across the IT industry, a wave of assessments, certifications, and credentials have emerged to signal the skills and competencies possessed by individuals. They also provide a framework for the evaluation and improvement of learning activities by showing which skills are not being appropriately addressed.

In addition to efforts to address IT needs broadly, several large IT companies, such as Microsoft, Cisco, and Novell have created certifications specific to their hardware and software. Additionally, the Computer Training Industry Association (CompTIA) has developed several vendor-neutral certifications, the prost prominent of which is the A+ certificate for computer maintenance and report. Other certifications, like the MOUS (Microsoft Office User Specialist) and Tek.Xam (developed by the Virginia Foundation for Independent Colleges) measure general computer literacy and problem solving skills using standard software such as word processors, spreadsheets, presentation programs, and internet browsers. These

certifications and their corresponding training programs are popular to students because the knowledge and skills they encompass are highly demanded by employers.

National Skill Standards and Assessments: One Model

The most valuable assessments are those that are based directly on employer input. Demand-driven, industry-based skill standards serve as a critical foundation for meaningful, valuable assessments. For example, the NorthWest Center for Emerging Technologies (NWCET) has partnered with leading IT employers to identify specific technical skills and knowledge, as well as foundation skills and personal qualities, needed in eight IT occupations: programmer/analyst; software engineer; technical support representative; database administration associate; information systems operator/analyst; interactive digital media specialist; network specialist; and technical writer.

NWCET, in turn, has worked closely with The Chauncey Group International, a subsidiary of the Educational Testing Service, to develop the Associate Technology Specialist (ATS) assessment, which measures an individual's preparation for entry-level jobs in the eight occupational areas. Given its foundation in industry-based skill standards, the ATS is positioned to help individuals determine their IT skills and help IT employers make critical hiring and training decisions.

Opportunities to Connect: Building Linkages in Information Technology

The U.S. Department of Education has identified 16 career clusters(as organizers for career focused education. The "IT Cluster" includes careers leading to the design, development, management and support of hardware, software, systems integration, and multimedia services. Recognizing the importance of IT to all industries, the other 15 clusters will include IT foundations and applications as a core standard for all students. The Education Development Center, Inc., (EDC) is leading the effort to define and support this national IT model and establish a K-12 curriculum framework. The curriculum framework is leading to a Skills Certificate that reports student's progress in developing IT skill standards. The effort is applying skill standards in IT into school-based and work-based activities in classrooms and workplaces across the country. Ten states are piloting the model with extensive industry input to create tools, resources, and best practices that will be shared nationwide.

For additional information on Building Linkages in IT, contact:
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Implementing STC: The Employer Participation Model

There are a number of means by which employers can help students develop skills and abilities. The National Employer Leadership Council's *Employer Participation Model* (EPM) provides a clear framework for employer activity. It is a resource for employers considering involvement in STC as well as education and community organizations searching for ways to reach out to employers. This next section focuses on EPM activities for working with students and teachers to highlight specific roles for employers.

I. Working with Students

The NELC's Employer Participation Model outlines a continuum of activities in which employers can participate to support student learning. These activities help students: 1) become ***aware*** of a wide range of careers and the skills required for success; 2) ***explore*** different career areas of interest in a way that supports their academic achievement; and 3) ***prepare*** for direct or future entry into multiple career paths.

While not every employer provides every activity, a true STC "system" is one in which all these types of activities exist for students at all levels. In the best of initiatives, several or teams of employers work together to make sure the full spectrum of opportunities is available for students. The diagram below illustrates the progression of opportunities provided by employers for students.

"Stage"	Career Awareness	Career Exploration	Career Preparation
	Career Talks	Job Shadowing	Internships
EPM Activity	Career Days/Fairs	Job Rotations	Apprenticeship
	Worksite Tours	Mentoring	

* The 16 Career Cluster areas include: Agriculture and Natural Resources; Arts, Audio-Video Technology, and Communications; Business and Administrative Services; Construction; Education and Training; Financial Services; Health Science; Hospitality and Tourism; Human Services; Information Technology Services; Legal and Protective Services; Manufacturing; Public Administration and Government; Retail/Wholesale Sales and Service; Scientific Research, Engineering, and Technical Services; and Transportation, Distribution and Logistics Services

IT Career Awareness

Despite the growth and influence of information technology in society, many students lack information on the scope of IT jobs, their importance to society and all industries, and what skills are required to succeed in IT careers and jobs that require technical skills. Students also have a negative perception of the industry, often believing that only "computer geeks" are able to succeed. This perception has been reported by the Information Technology Association of America and other organizations working to connect IT employers with students and teachers.

Career Awareness activities can help overcome this stigma by simply introducing students to workplaces where IT professionals are employed. An important point to stress is that nine of ten IT jobs are found in non-IT companies, often small- and medium-sized businesses.

Employers can visit schools to discuss their work and host tours of businesses to share this information with a large number of students. An emphasis on the basic and core IT skills required of workers is an important component of Career Awareness activities. Employers often stress how the skills needed for professional success are developed through core math, science, English, and other academic courses. With the right information, students begin to see the importance of "the basics" to using IT throughout their future learning and in all careers.

The Kemtah Group
Albuquerque, New Mexico

Ensuring Pathways to Success for All Individuals.

The Kemtah Group, Inc., is a provider of IT services headquarted in Albuquerque, New Mexico. Kemtah's headquarters, along with its operations in Arizona, California and Colorado, work with area students and local businesses to promote school-to-careers experiences.

Kemtah's owner and CEO, Keith Harris, is very interested in tapping into the skill potential of underrepresented populations. This drive to help all students succeed in the world of work resulted in the creation of the Innovative Workforce Options Resources at Kemtah (IWORK) program. In 1999, Kemtah launched IWORK, enabling students with career barriers, such as physical disabilities, to

obtain the skills necessary to succeed in the growing IT workforce.

After completing a six-month instruction resulting in a Microsoft Certification, Kemtah partnered with local and national companies to place the IWORK graduates in internships, matching the skills of the student with the needs of the company. In addition to providing needed workers for the industry, the experience, according to program director Mark Cornett, breaks down barriers on both sides: employers see beyond the student's employment challenge, and students gain valuable work experience. Cornett expects many of the student interns to be hired as permanent employees as a result of the experience. Additional outreach has occurred at a satellite campus in Las Cruces, New Mexico, and Kemtah's Sacramento office is gearing up to provide on-site training as well.

In addition to the IWORK program, Kemtah has for several years helped hundreds of area elementary, secondary, and college age students explore the IT industry. From participating in career fairs for students of all ages, offering facility tours, and participating in speaking engagements, Kemtah has continually shown a commitment to working with the community. The most recent development has been an agreement with the Albuquerque school district, opening Kemtah's adaptive computer lab to high school students with disabilities for supplemental computer training. The company also plans to offer computer skills workshops to all teachers in the Albuquerque school district.

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IT Career Exploration

Career Awareness activities can open up doors for students who might not otherwise be interested in IT. More in-depth exploration activities further demonstrate the importance of classroom learning to developing the IT skills required in all careers. Exploration activities include job shadowing through a company or series of companies to understand the range and scope of IT activity in today's workplace.

Important here is highlighting that there are many potential "career pathways," and that there is no "one way" to enter any specific career. For example, while many core IT workers do have traditional computer science degrees, individuals from every academic background hold key jobs in the industry.

The Gallup Organization
Omaha, Nebraska

Canvassing Schools for Tomorrow's Workforce

The Gallup Organization, a worldwide marketing and management research, consulting, and training company, is best known for The Gallup Poll, which dates from 1935. Gallup looks for specific talents for positions such as PC Support Specialist, Data Analyst, Java Developer, and Software Application Developer to help operations run smoothly. The company has responded to the need to develop its future workforce by exposing students to careers they are not readily familiar with, such as those at Gallup. The company has worked for several years with community-based intermediary organizations to establish local school partnerships to arm students with information on the organization's career opportunities.

Members of Gallup's staff serve in a range of school-to-careers activities, such as:

- Volunteering as an on-line mentor to student. Employees mentor elementary school students via e-mail rather than the traditional in-person one-on-one.
- Classroom presenters. Employees speak during career exploration activities in elementary schools.
- Career fairs. Gallup sets up booths and educates students on career opportunities in the field.

Gallup also works closely with the Applied Information Management Institute to ensure that its efforts build upon those of other employers and organizations in Omaha.

In the process of canvassing schools and sharing career opportunities with students, Gallup has strengthened relationships with schools and with intermediary organizations that help organize many of the region's STC activities. As with all high-quality school-to-careers efforts, Gallup, the students it serves, and the community all benefit from these partnerships.

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IT Career Preparation

Employers are also playing key roles to help students reinforce their academic skills and support their entry into IT careers by offering intensive work-based learning and mentoring opportunities. Equally important is the use of industry-based standards, such as those identified by NWCET, to help students benchmark their skills to those required in the industry.

EDS
Plano, Texas

Preparing Students for the Information Technology Workforce

EDS, based in Plano, Texas, is a global leader in providing e-business and information technology services to 9,000 business and government clients in approximately 55 countries around the world. The company has more than 121,000 employees worldwide and works in a wide variety of industries, including communications, energy and chemicals, financial services, government, healthcare, products and retailing, and travel and transportation.

EDS works directly with co-op and intern programs at universities across the country in an effort to enhance recruiting efforts, provide earlier contact with students, develop long-term relationships, and save money on recruiting costs. EDS and university staff work together to identify opportunities for students at client sites within the United States, such as General Motors, EDS' largest customer.

EDS also participates in the Advancing Minorities Interest in Engineering program (AMIE). AMIE is a program focused on providing engineering and information technology opportunities for students who are enrolled in engineering programs at nine historically black colleges and universities. Co-op and intern students work side-by-side with EDS employees and customers in a wide variety of IT projects. To date, student projects have ranged from ensuring Y2K compliance to web page development, from financial analysis to web-based training packages development. This kind of real-world business experience allows the students to gain highly valued skills that prospective employers are looking for within the market place. Many of the students find their experience at EDS so valuable that they stay on after graduation.

EDS has business/education partnerships in several countries with programs including mentoring, tutoring, curriculum and career enrichment, staff development, student and teacher grant programs, technical consulting and support, leadership, and professional development classes.

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Manpower, Inc.
Milwaukee, Wisconsin

Powering Up the Next Generation of Staff

Manpower, one of the world's largest staffing agencies, and Manpower Professional, its high-level staffing-unit, have for several years anticipated an increasing shortage of IT job candidates. To help its clients address the deficit, Manpower Professional partnered with SmartForce, a leading provider of training for IT professionals and National Computer Systems (NCS), a leader in IT skills assessment and certification. Together, they created REALskills!(tm), which helps create opportunities for young people to build the skills needed for success in the future.

REALskills!(tm) provides high school students two years of training for a Microsoft Certified Systems Engineer (MCSE) and A+ certification, then moves them into internships with local companies who use Manpower Professional s staffing services. To date, more than 1,500 students from over 70 schools across the United States are involved in some stage of the program. Once the training is complete, Manpower Professional uses its custom training tools to teach students the "soft skills" required in the workplace. Students then work in jobs such as PC Support Technicians who troubleshoot, install, and configure hardware and software. After completing the training process, students have access to Manpower Professional's other IT training opportunities, including the Global Learning Center, the company's on-line university.

Many of Manpower's 1,100 field offices also participate in a variety of community-based school-to-careers activities. For example, the office in Allentown, Pennsylvania offers skills assessment, training, and job readiness counseling through a new Career Resource Center at Lehigh Carbon Community College. Manpower Professional's office in Gurnee, Illinois has partnered with Abbott Laboratories, a local customer, to develop career resource programs and internships for Zion-Benton Township High School in Zion, Illinois.

Manpower, the world's leading provider of staffing and workforce management solutions, annually provides employment and training to approximately two million people through more than 3,500 offices in 54 countries, including more than 250 Manpower Professional offices worldwide that specialize in the assignment of information technology, engineering, scientific, finance, telecommunications, marketing, human resources, and quality professionals.

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II. Working with Teachers

Teachers serve as the direct link to student learning. If the education system is to effectively prepare students for career and life success, employers must partner with schools and teachers to facilitate career awareness, exploration, and preparation activities. Exposure to and guidance from employers ensures that teachers reinforce in the classroom the skills that students develop through STC. As outlined in the Employer Participation Model, the connection between employers and teachers can occur in two ways:

- **Employers Working Directly with Teachers.** Direct connections between employers and educators is critical to ensuring that teachers fully understand the demands of the workplace and how developing these workplace skills can support academic learning. Employers can work with teachers to develop classroom projects and school-based enterprises that help students make continued connections to the IT industry. Short- and long-term teacher externships allow teachers to spend time at a workplace to see first-hand the demands of the industry. Teachers then work with employers and other educators to apply lessons learned in the workplace to benefit students.
- **Employers Supporting the Work of Teachers.** Employers have important roles to play in helping teachers use workplace experiences to promote student achievement. Employers can work with teachers to develop curriculum and instructional materials that directly help students build workplace skills and the academic basics of reading, math, communication, teamwork, and problem-solving. Equally important is integrating industry skill standards into academic standards to promote student academic achievement through contextual, work-based experiences.

Intel Corporation
Santa Clara, California

Making a Difference through Teaching and Technology

The Intel Corporation, headquartered in Santa Clara, California, is a worldwide manufacturer of information technology components and, as a result, is helping to make advances in IT solutions. To ensure that schools and students are prepared for new workplace realities, Intel is investing in technology in the classroom through the broad Intel Innovation in Education initiative, a global effort to realize the possibilities of science and technology in education. Intel's CEO, Craig Barrett, launched the effort by acknowledging that little has been done to educate teachers in effectively using today's technology in the classroom, and deciding to actively support change in this area. Specifically, Intel established the Teach to the Future Program in partnership with Microsoft to focus on providing training to teachers who have been unsuccessful in synchronizing the use of computers with their current curriculum.

In its first year of the program, Intel organized Regional Training Agencies in Arizona, Northern California, Oregon, and Texas. Teachers in these states participate in 20 hours of take-home activities and 40 hours of classroom instruction from ten curricular modules completed weekly. The modules utilize basic computer applications to train teachers in producing multimedia presentations, creating student and teacher publications and materials, creating websites, and designing an implementation plan for their own classroom. These plans will eventually be placed on the Intel Education Destination website. Teachers can also use the website to research standards for technology in the classroom, lesson plans, and other useful resources.

Intel plans to invest more than $100 million in classroom technology and other educational programs over the next three years in an effort to reach more than 400,000 teachers in 20 countries. It is hoped that this work will help teachers and students apply technology to learning.

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"Third Party" Intermediaries

Employer involvement is often facilitated by an "intermediary" organization. Intermediaries serve as third-party "brokers" who ensure that partnerships between employers and educators meet their intended goals and maintain quality. They convene the key partners to determine what types of programs and policies are needed to meet the goals of both business and education. Once this set of programs and policies is outlined, they provide direct services to employers, educators, and young people to ensure that the needs and expectations of all are being met and that additional partners are recruited and engaged in the emerging system.

There are many intermediaries across the country working closely with IT employers. Many local school-to-careers partnerships have established committees or other structures to focus specifically on information technology skills. Others include IT employers in broad efforts to meet the needs of all employers, students, and teachers.

Greater Louisville, Inc.
Louisville, Kentucky

In the Middle of Change

When IT employers in Louisville, Kentucky faced a shortage of qualified workers, Greater Louisville, Inc., the Metro Chamber of Commerce, took action. They created the CIO Roundtable, a coalition of Chief Information Officers from 30 local IT companies. One of the Roundtable's many tasks was to identify and articulate the skills needed for entry-level information technology employees.

Together the consortium developed an internship system in which qualified rising sophomores, juniors, and seniors are eligible for eight-week internships with the member companies. In the summer of 2000, only the second year of the program, 34 qualified students participated in internship opportunities at 20 area companies. Many of these students have the opportunity to continue the experience during the school year either part-time (for younger students) or as a co-op experience for seniors. The program will expand to include three additional high schools in summer 2001, with a concurrent increase in internship opportunities and employers.

The consortium has also worked with secondary schools' curriculum to meet the needs of the employers. For example, Microsoft certification programs are now offered at several of the participating high schools, and one of the new high schools for 2001 is also a Cisco Academy.

While these opportunities have been supported by several key IT employers, their partnership with Greater Louisville, Inc., has been key to the broad scale and scope of the effort. Through the leadership of Greater Louisville, Inc., local IT employers look forward to building a strong future in Louisville.

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Next Steps

Greater numbers of employers are participating in STC to help young people develop the IT skills integral to success in the 21st Century. Lessons from their experiences include:

- **Find out what is happening around school-to-careers in your state and community.** Every state has a STC director and office, and most communities house local STC partnerships. Contacting these individuals and organizations to express your interest in STC will help them connect you and create opportunities to work with teachers and students.

  For more information, contact:
  National School-to-Work Office
  400 Virginia Avenue, SW, Suite 210
  Washington, DC 20024
  (800) 251-7236; Fax: (202) 488-7395
  E-mail: stw-lc@ed.gov
  Website: www.stw.ed.gov

- **Connect with your local information technology association.** Many states and regions have IT associations, committed to the needs and demands of local IT employers. Contact them to find out how you can participate in their STC activities, or help them develop a STC strategy if they have not yet done so.

  For more information about local IT associations, contact:
  Information Technology Association of America
  1401 Wilson Boulevard, Suite 1100
  Arlington, VA 22209-2318
  (703) 522-5055; Fax: (703) 525-2279
  Website: www.itaa.org/crita

- **Join the National Employer Leadership Council.** NELC members receive frequent updates and resources on employer involvement in STC, and become part of a network of thousands of employers who are working together to build STC opportunities for all.

  For more information, contact:
  National Employer Leadership Council
  c/o National Alliance of Business
  1201 New York Avenue, NW, Suite 700
  Washington, DC 20005
  (800) 360-NELC, Fax: (202) 822-8026
  E-mail: nelc@nelc.org
  Website: www.nelc.org

- **Participate in *The Techforce Initiative: Building IT-School-to-Careers Partnerships.*** Employers serve on Industry Leadership Teams and are working in communities across the country to establish meaningful, long-term partnerships with educators to help young people develop IT skills.
  For more information, visit www.techworkforce.org/programs/stw.htm

- **Check out these other key organizations and resources:**

National Alliance of Business
1201 New York Avenue, NW, Suite 700
Washington, DC 20005
(800) 787-2848, Fax: (202) 289-1303
E-mail: info@nab.com
Website: www.nab.com

Education Development Center
55 Chapel Street
Newton, MA 02158-1060
(617) 969-7100
Website: www.edc.org

NorthWest Center for Emerging Technologies
3000 Landerholm Circle SE, N258
Bellevue, WA 98007
(425) 373-4215; Fax: (425) 562-6193
E-mail: nwinfo@bcc.ctc.edu
Website: www.nwcet.org

The Chauncey Group International
664 Rosedale Road
Princeton, NJ 08540
(609) 720-6500; Fax: (609) 720-6550
E-mail: info@chauncey.com
Website: www.chauncey.com

Computing Research Association
1100 Seventeenth Street NW, Suite 507
Washington, DC 20036-4632
(202) 234-2111; Fax: (202) 667-1066
E-mail: info@cra.org
Website: www.cra.org

Computing Technology Industry Association
450 East 22nd Street, Suite 230
Lombard, IL 60148
(630) 268-1818; Fax: (630) 268-1384
E-mail: info@comptia.org
Website: www.comptia.org

Microsoft Office User Specialist (MOUS)
c/o Nivo International
1317 East 750 North
Orem, UT 84097
(801) 426-6300; Fax: (801) 426-5866
Website: www.mous.net

Tek.Xam
c/o Virginia Foundation for Independent Colleges
8010 Ridge Road, Suite B
Richmond VA 23229
(804) 288-6609; Fax: 804-282-4635
Website: www.tekxam.com

Glossary of Terms

The following terms, used throughout this publication, come from the NELC's Employer Participation Model, a guide designed to help employers structure their involvement in school-to-careers. For additional information or to receive copies of the EPM, please contact the NELC directly.

Career Awareness

- *Career Talks:* Employers and employees visit students in the classroom and explain the work in their industry or company.
- *Career Days/Career Fairs:* Special events are typically held to allow students to meet with postsecondary educators, employers and employees, or human resource professionals to learn about education and work opportunities. Career day activities are designed to help students think about their interest and abilities in relation to potential careers.
- *Worksite Tours:* Students visit the worksite, talk with employees, and observe the workplace activities.

Career Exploration

- *Job Shadowing:* A student follows an employee at a company location to learn about a particular occupation or industry. Job shadowing can help students explore a range of career objectives and select a career major for the latter part of high school.
- *Job Rotations:* At a worksite, students transfer among a number of positions and tasks that require different skills and responsibilities in order to understand the steps that go into creating a product and/or service, how their own effort affects the quality and efficiency of production and customer service, and how each part of the organization contributes to productivity.

Career Preparation

- *Internships:* Students work for an employer for a specified period of time to learn about a particular industry or occupation. Students' workplace activities may include special summer projects, a sample of tasks from different jobs, or tasks from a single occupation. These may or may not include financial compensation.
- Apprenticeship
  - Youth Apprenticeship: A multi-year program that combines school- and work-based learning in a specific occupational area or occupational cluster and is designed to lead directly into either a related postsecondary program, entry-level job, or registered apprenticeship program. Youth Apprenticeships may or may not include financial compensation.
  - Apprenticeship (Registered): Registered apprenticeship programs meet specific federally-approved standards designed to safeguard the welfare of apprentices. The programs are registered with the Bureau of Apprenticeship and Training (BAT), U.S. Department of Labor, or one of the State Apprenticeship Agencies of Councils approved by BAT. Apprenticeships are relationships between an employer and employee during which the worker, or apprentice, learns an occupation in a structured program sponsored jointly by employers and labor unions or operated by employers and employee associations.
- *Mentoring:* Employee(s) who possess the skills and knowledge to be mastered by a student, and who instructs the student, critiques the performance of the student, challenges the student to perform well, and works in consultation with teachers or youth organizations and the employer of the student.

Building on the NELC Agenda

The National Employer Leadership Council is a business membership organization dedicated to expanding and enhancing employer involvement in school-to-careers. The NELC advocates and supports school-to-careers initiatives combining classroom courses with real-life learning to ensure all students meet high standards and, therefore, are prepared for continuing education and the cutting-edge jobs of the 21st Century. NELC members, and the NELC Leadership Board of senior business executives, are committed to sustaining the significant changes in teaching and learning taking place across the country as a result of school-to-careers.

The NELC recognizes that as the knowledge economy continues to experience rapid change in the nature of work and the type of jobs available, an increasing number of employers, educators, and community organizations are striving for a seamless education system that equips individuals with knowledge that can be upgraded continuously. These systems will be based on defining and articulating strategies for building "knowledge supply chains" that help align education and training activities directly with employer demand.

The development of these systems requires an understanding of how skill needs link to skill development. The employer community and, as a result, the NELC, is advocating for national, state, and local education and training systems built on four common principles:

- A clear process for determining and understanding **employer demand.** This includes regular and ongoing information on the foundational ("soft") and academic skills required of all workers, as well as the occupation- and industry-specific skills required in a variety of jobs.
- Methods to set **benchmarks and standards for competency based directly on this employer demand.** Critical to this principle is ensuring that programs measure what individuals can do in order to ensure that employer needs will be met.
- **Certification and credentialing** of these skills and abilities that are valued and used by employers in the hiring, re-training, and education investment processes.
- Building **curriculum and programs designed to build these competencies and leading to these certificates and credentials.**

To find out more, contact: **National Employer Leadership Council,** c/o National Alliance of Business, 1201 New York Avenue, NW, Suite 700, Washington, DC 20005, Phone: (800) 360-NELC, E-mail: nelc@nelc.org; Website: www.nelc.org

The work of the NELC is supported by the employer community and the National School-to-Work Office, a joint initiative of the U.S. Departments of Education and Labor.